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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Toshihisa Nozawa

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EXAMINER

LUPINO, GINA M

ART UNIT

PAPER NUMBER

3652

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/786,068	Applicant(s) NOZAWA ET AL.	
	Examiner Gina M. Lupino	Art Unit 3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

I. Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because:
 - 1.1. They fail to show Θ as described in the specification. See paragraph 40, line 25.
 - 1.2. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because:
 - 2.1. Reference characters "3" and "12" have both been used to designate "transfer chamber".
See paragraph 43, lines 15, 17, 18.
 - 2.2. Reference characters "31" and "36" have both been used to designate the "belt". See Figure 4. Thus, the Examiner suggests the Applicant amend Figure 4 so that reference character 31 points to the second arm, and not to the "belt", as indicated in the specification. See paragraph 50, lines 13-18.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because
 - 3.1. They include the following reference character(s) not mentioned in the description:
 - 3.1(a) 209, 212a, 217a, 217b, 442a, 442b, and 223b. See Figures 8, 12, 13, and 14.
 - 3.2. They do not include the following reference sign(s) mentioned in the description:
 - 3.2(a) 208. See paragraph 98, line 18.
 - 3.2(b) 223A, 223. See paragraph 103, lines 1-2, which indicates these references signs are shown on Figure 12. However, neither "223A" nor "223" are shown on Figure 12.
Appropriate correction is required.
 - 3.2(c) 266. See paragraph 103, line 8.

3.3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

II. Specification

1. The Specification is objected to because of the following informalities:

- 1.1. In paragraph 40, line 18 and paragraph 41, line 1 "jointed-arm robot" should be labeled with a reference character.
- 1.2. In paragraph 9, line 27, there is a spelling error. Thus, the Examiner suggests the Applicant change "theretino" to -- thereinto -- if the Applicant intends to state "the substrate is carried thereinto after being aligned by ... prealignment...". See Paragraph 9.
- 1.3. In paragraph 43, reference character "12" has been used to designate both "transfer path" and "transfer chamber". Thus, the Examiner suggests the Applicant clarify whether reference character "12" refers to either "transfer path" or "transfer chamber".

III. Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by LEI (U.S. Patent Application Publication No. 2003/0113187 A1).

1.1. With respect to claim 1, LEI discloses a substrate processing apparatus 100 with:

1.1(a) A first process chamber 106 in which a first process disposes a substrate 125,

1.1(b) A second process chamber 108 in which a second process disposes the substrate 125 that has finished the first process,

1.1(c) A transfer mechanism 120 configured to transfer the substrate 125 and carry the substrate 125 into and out of the first process chamber 106 and second process chamber 108,

1.1(d) A detecting mechanism 204 configured to detect a relative position between the substrate 125 to be carried into the second process chamber 108 by the transfer mechanism 120 and the second process chamber 108.

1.1(e) A correcting mechanism 180 configured to correct the displacement of the relative position based on a result of the detection by the detecting mechanism 204.

2. Claims 1, 2, 3, 7, 8, 9, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by HERTEL (U.S. Patent No. 4,836,733).

2.1. With respect to claim 1, HERTEL discloses a wafer processing system with:

2.1(a) A first process chamber 20 in which a first process disposes a wafer,

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- 2.1(b) A second process chamber 24 in which a second process disposes the wafer that has finished the first process,
- 2.1(c) A transfer mechanism 22 configured to transfer the wafer and carry the wafer into and out of the first process chamber 20 and second process chamber 24
- 2.1(d) A detecting mechanism configured to detect a relative position between the wafer to be carried into the second process chamber 24 by the transfer mechanism 22 and the second process chamber 24. See column 3 lines 29-34, column 8 lines 24 – column 10 line 45.
- 2.1(e) A correcting mechanism configured to correct the displacement of the relative position based on a result of the detection by the detecting mechanism. See column 3 lines 29-34, column 8 lines 24 – column 10 line 45.
- 2.1(f) See Figure 1, column 2, lines 63-68, and column 3, lines 1-6.
- 2.2. With respect to claim 2, HERTEL discloses a wafer processing system, as discussed above, with:
 - 2.2(a) A transfer mechanism 22 with a holding portion configured to hold a wafer and
 - 2.2(b) A detecting mechanism detects an absolute position of the holding portion to the second chamber.
 - 2.2(c) See Figures 1, 2, column 3, lines 25-51, column 4, lines 49-51, 61, column, 5 lines 61-64, and column 6, line 4.
- 2.3. With respect to claim 3, HERTEL discloses a wafer processing system, as discussed above, with:
 - 2.3(a) A storage unit 150 configured to store a coordinate system for representing the absolute position of the holding portion and predetermined coordinates representing a proper position of the holding portion in the coordinate system.

2.3(b) Where the correcting mechanism 114 compares coordinates in the coordinate system of the substrate detected by the detecting mechanism and the predetermined coordinates to correct displacement between both coordinates, correcting the displacement of the relative position.

2.3(c) See Figure 8, column 9, lines 24-26, column 8, lines 24-41, and column 10, lines 33-45.

2.4. With respect to claim 7, HERTEL discloses a wafer processing method with:

2.4(a) A first process chamber 20 in which a first process disposes a wafer,

2.4(b) A second process chamber 24 in which a second process disposes a wafer,

2.4(c) A transfer mechanism 22 configured to transfer the substrate and carry the substrate into and out of the first process chamber 20 and the second process chamber 24,

2.4(d) Where the method includes:

2.4(d)(i) Applying the first process on the substrate in the first process chamber 20

2.4(d)(ii) Carrying the substrate out of the first process chamber by the transfer mechanism 22

2.4(d)(iii) Carrying the substrate out of the first process chamber 20 and into the second process chamber 24 by a transfer mechanism 22

2.4(d)(iv) Detecting a relative position between the substrate to be carried into the second process by the transfer mechanism 22 and the second process chamber 24 and correcting displacement of the relative position based on a result of detection of the previous step.

2.4(d)(v) See column 3 lines 29-34, column 8 lines 24 – column 10 line 45.

2.5. With respect to claim 8, HERTEL discloses a wafer processing method, as discussed above, where:

2.5(a) The step of detecting a relative position between the substrate to be carried into the second process by the transfer mechanism 22 and the second process chamber 24, as discussed above, is capable of being conducted in the course of carrying a substrate into the second processing chamber 24.

2.5(b) See Figures 1, 2, and column 3 lines 29-34, column 8 lines 24 – column 10 line 45.

3. Claims 9, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by TABRIZI (U.S. Patent No. 6,315,512).

3.1. With respect to claim 9, TABRIZI discloses a wafer processing system, as discussed above, with:

3.1(a) A base portion 428,

3.1(b) At least two holding portions 426a, 426b, 526a, 526b each capable of holding a substrate,

3.1(c) An arm portion coupling the at least two holding portions 426a, 426b, 526a, 526b to each other and connected to the base portion 428, and

3.1(d) A driving portion configured to drive the arm portion, driving the at least two holding portions 426a, 426b, 526a, 526b to move back and forth synchronously

3.1(e) See Figure 5.

3.2. With respect to claim 10, TABRIZI discloses a wafer processing system, as discussed above, with:

3.2(a) A base portion 428,

3.2(b) Two holding portions 426a, 426b, 526a, 526b each capable of holding a substrate,

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3.2(c) An arm portion coupling the two holding portions 426a, 426b, 526a, 526b to each other and connected to the base portion 428, and

3.2(d) A driving portion configured to drive the arm portion, driving the two holding portions 426a, 426b, 526a, 526b to move back and forth so as to become apart from and close to each other.

3.2(e) See Figure 5.

3.3. With respect to claim 11, TABRIZI discloses a wafer processing system, as discussed above, with:

3.3(a) A base portion 428, and

3.3(b) A plurality of transfer mechanisms 430a, 430b provided on the base, each of which include

3.3(b)(i) Two holding portions 426a, 426b, 526a, 526b each capable of holding a substrate,

3.3(b)(ii) An arm portion coupling the two holding portions to each other and connected to the base portion, and

3.3(b)(iii) A driving portion configured to drive the arm portion, driving the two holding portions to move back and forth so as to become apart from and close to each other.

3.3(b)(iv) See Figure 5.

IV. Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the

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differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 4, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over KATO (U.S. Patent No. 5,054,991) in view of HERTEL (U.S. Patent No. 4,836,733).

1.1. With respect to claim 4, HERTEL discloses a wafer processing system, as discussed above.

1.1(a) However, HERTEL fails to teach:

1.1(a)(i) A detecting mechanism with at least two photosensors provided on a carry-in route of the substrate by the transfer mechanism.

1.1(a)(ii) Where the interval between the two photosensors is smaller than a diameter of the substrate.

1.1(b) KATO teaches:

1.1(b)(i) A detecting mechanism with at least two photosensors 24-29 provided on a carry-in route of the substrate 20 by the transfer mechanism 7.

1.1(b)(ii) Where the interval between the two photosensors 24-29 is smaller than a diameter of the substrate 20.

1.1(b)(iii) See Figures 1, 2, 3, column 1, lines 59-64, columns 2, lines 12, 13, 68, column 3, line 1, column 4, lines 17-20, and column 5, lines 36-37, 48-49.

1.1(c) Therefore, it would have been obvious to one of ordinary skill in the art to modify HERTEL with the detecting mechanism and photosensors of KATO in order to detect the position of the wafer.

1.2. With respect to claim 5, HERTEL discloses a wafer processing system, as discussed above.

1.2(a) However, HERTEL fails to teach:

1.2(a)(i) The carry-in route of the substrate by the transfer mechanism extends linearly, and

1.2(a)(ii) Where the two photosensors are arranged in a direction substantially orthogonal to the carry-in route.

1.2(b) KATO teaches:

1.2(b)(i) A carry-in route of a wafer 20 by a transfer mechanism 7 that extends linearly, and

1.2(b)(ii) Where two photosensors 24-29 are arranged in a direction substantially orthogonal to the carry-in route.

1.2(b)(i) See Figure 3, column 4, lines 59-68, and column 5, lines 1-60.

1.2(c) Therefore, it would have been obvious to one of ordinary skill in the art to modify HERTEL with the detecting mechanism and photosensors of KATO in order to detect the position of the wafer during the carry-in route.

1.3. With respect to claim 6, HERTEL discloses a wafer processing system, as discussed above.

1.3(a) However, HERTEL fails to teach a detecting mechanism with a transmission-type photosensor.

1.3(b) KATO teaches transmission-type photosensors. See column 4, lines 17-18.

1.3(c) Therefore, it would have been obvious to one of ordinary skill in the art to modify HERTEL with the photosensors of KATO in order to detect the position of the wafer during the carry-in route using transmission-type photosensors.

V. Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gina M. Lupino whose telephone number is (571) 272-6557. The examiner can normally be reached on 8:30am - 5:00pm EST.
3. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.
4. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).
5. GML



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